Extension Responds: Soybean Rust

Growers will need to be vigilant in scouting for soybean rust in 2005

By Brian Hudelson, Plant Disease Diagnostician, University of Wisconsin-Madison/Extension, 608-262-2863, brian.hudelson@ces.uwex.edu

In November 2004 one of two fungi that cause soybean rust was discovered in research plots in Louisiana. This discovery was the first report of a soybean rust fungus in the continental United States. The fungus that was discovered, *Phakopsora pachyrhizi,* is the more aggressive of two fungi that can cause soybean rust. USDA experts have speculated that extensive hurricane activity in the late summer and fall of 2004 helped move the spores of *P. pachyrhizi* into the U.S.

Because most of the U.S. soybean crop had been harvested at the time that soybean rust was discovered, the disease did not have a big impact on the 2004 crop. However, *P. pachyrhizi* can infect about 90 different plant species. In particular the fungus can infect kudzu, a pervasive invasive weed that survives throughout the winter in the south. The prevalence of kudzu and other host species makes it very likely *P. pachyrhizi* will survive the winter in the south. Since winds during the spring and summer tend to move from south to north, the fungus will likely arrive in Wisconsin next summer.

Wisconsin growers should be vigilant in scouting for soybean rust in 2005. Initial symptoms of soybean rust include the formation of small, gray spots on soybean leaves, particularly on the undersides of leaves. These spots are most likely to occur first on lower leaves where environmental conditions are more favorable for spores to germinate. Infections can also occur on petioles, stems and pods. Spots will increase in size over time and will change color from gray to tan or reddish-brown. Tan lesions eventually mature to form small pimple-like structures (called pustules) on the lower leaf surface. These pustules contain powdery tan spores. Reddish-brown lesions are composed primarily of dead tissue and typically have only a limited number of pustules. As plant canopies close and pods begin to set, the fungus can rapidly spread from the lower to the upper foliage of plants. Severe outbreaks of the disease have been reported to cause up to 80 percent yield losses in some soybean fields in Brazil.

If you suspect that that you are seeing soybean rust in 2005, it is vital that you submit a sample to the Plant Disease Diagnostics Clinic (PDDC) for examination. Early detection is critical for management of the disease. Keep in mind however that several other common soybean diseases, including bacterial pustule, brown spot and downy mildew, have symptoms very similar to those of soybean rust. If in doubt, submit a sample.

The PDDC will provide soybean rust diagnostics free of charge. Submitters will receive a written report indicating whether or not the soybean rust fungus is present on their sample, as well as current information on management of the disease. In the absence of soybean rust, the report will provide information on any other look-alike foliar diseases to help educate growers and crop scouts on the difference between rust and other soybean diseases. Standard PDDC fees will apply for diagnosis of other non-foliar soybean diseases.

The University of Wisconsin-Madison and University of Wisconsin-Extension are committed to providing information and support to Wisconsin soybean growers as they face new challenges to soybean production, including soybean rust. Feel free to contact your county UW-Extension agriculture agent for updates on soybean rust, including information on training sessions, sample submission and soybean rust control. Also be sure to check future issues of the Wisconsin Crop Manager for updates.

For more information: Brian Hudelson, 608-262-2863, brian.hudelson@ces.uwex.edu. December 8, 2004
